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**A new larval trombidiid, *Sicilitrombium albanesianum* nov.gen., nov.sp. (Acari: Prostigmata: Trombidiidae) from Sicily, Italy, with notes on *Arknotrombium* HAITLINGER 2007 and *Javatrombium* HAITLINGER 2009**

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**A b s t r a c t :** *Sicilitrombium albanesianum* nov.gen., nov.sp. is described from Sicily. It is fourth genus of Trombidiidae having seta on palp femur. Corrected leg setal formula for the genera *Arknotrombium* and *Javatrombium* is given. *Javatrombium* is transferred to the family Microtrombidiidae.

**K e y w o r d s :** taxonomy, new genus, new species, Sicily, larva, *Arknotrombium*, *Javatrombium*.

### Introduction

The family Trombidiidae includes 22 genera: *Trombidium* FABRICIUS 1775, *Allothrombium* BERLESE 1903, *Paratrombium* BRUYANT 1910, *Dinothrombium* OUDEMANS 1910, *Mesothrombium* HIRST 1926, *Caenothrombium* OUDEMANS 1927, *Xenothrombium* OUDEMANS 1927, *Dolichothrombium* FEIDER 1945, *Variathrombium* ROBAUX 1969, *Clinotrombium* SOUTHCOTT 1986, *Pollicotrombium* SOUTHCOTT 1986, *Monotrombium* ZHANG 1995, *Calctrombidium* HAITLINGER 2003, *Iranitrombium* SABOORI & HAJIQANBAR 2003, *Oskootrombium* SABOORI, BAGHERI & HADDAD IRANI-NEJADI 2006, *Andinothrombium* MAKOL 2007, *Andrethrombium* MAKOL 2007, *Darjeelingia* MAKOL 2007, *Robauxthrombium* MAKOL 2007, *Ronaldothrombium* MAKOL 2007, *Wohlmanella* MAKOL 2007 and *Arknotrombium* HAITLINGER 2007 (FABRICIUS 1775, BERLESE 1903, BRUYANT 1910, OUDEMANS 1910, 1927, HIRST 1926, FEIDER 1945, ROBAUX 1969, SOUTHCOTT 1986, ZHANG & NORBAKHSH 1995, HAITLINGER 2003, 2007, SABOORI & HAJIQANBAR 2003, SABOORI et al. 2006, MAKOL 2007). To the family Trombidiidae was mistakenly included *Javatrombium* HAITLINGER 2009. Now, it is transferred to the family Microtrombidiidae. In this paper *Sicilitrombium albanesianum* nov.gen., nov.sp. is described.

### Material and methods

In June 2010 two larvae belonging to the family Trombidiidae were collected in Sicily from herbaceous plants. Specimens were preserved in 70% ethanol and mounted later in

1998

Berlese's medium. Measurements are expressed in micrometers ( $\mu\text{m}$ ). The terminology of structures and setal notation for trombidiids are adapted from SOUTHCOTT (1986) and HAITLINGER (2007). Holotype and paratype of the new species are deposited at the Museum of Natural History, Wrocław University (MNHWU), Poland.

## Results

### Family Trombidiidae LEACH 1815

#### *Sicilitrombium* nov.gen.

Type species: *Sicilitrombium albanesianum* nov.gen., nov.sp.

Diagnosis: scutum subquadrate, rounded anteriorly, straight posteriorly. Setae AM, AL and PL, all with very fine setulae.  $AP > MA$ . Scutellum oval with 2 setae; its width less than width of scutum. One thin and nude seta on palpfemur. Palpgenu without setae. Palptibia with three nude setae. Palptarsus with two nude setae, two solenidia and two eupathidia. Palp tibial claw bifid. Hypostomalae thin, covered with short setulae. All coxalae with setulae. Coxa II with two setae. Genu II and III with one solenidion. Inner claw on tarsus III normally developed.

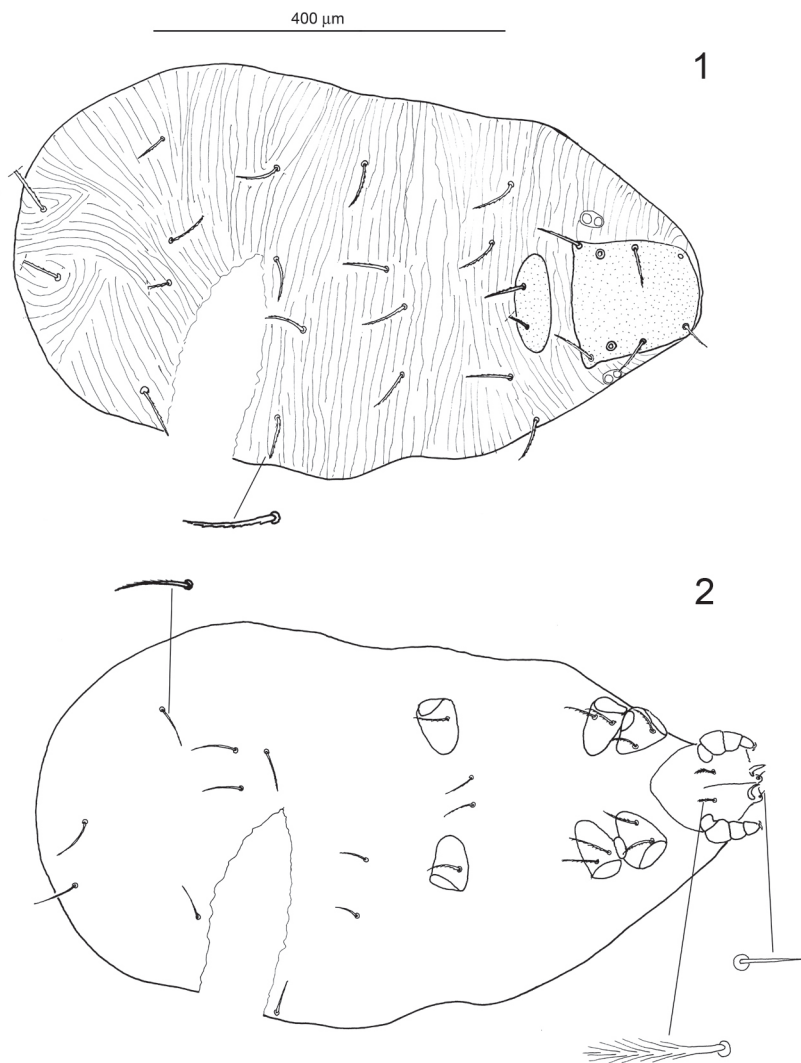
Etymology. Generic name is derived from the island name, the place of type species collection, and "-tromb-" as a root word of the superfamily.

Remarks. The new genus *Sicilitrombium* has on palpfemur one seta. In the family Trombidiidae only three genera have one seta on palpfemur: *Trombidium*, *Paratrombium* and *Pollicotrombium* (MAKOL 2007). *Sicilitrombium* nov.gen. differs from these genera in thin seta on palpfemur vs. spine-like seta. Moreover, it differs from *Trombidium* in palptarsus with all setae nude vs. one seta barbed,  $AP > MA$  vs.  $AP < MA$ , scutellum oval,  $LSS < W$  vs. scutellum trapezoidal, LSS of similar width as scutum, medial seta 1a distinctly barbed vs. medial seta 1a nude or with few tiny setulae and tarsus III with paired claws and a claw like empodium vs. tarsus III with one normally developed claw and empodium; from *Paratrombium* in barbed setae AM vs. AM nude, coxala 1a with short setulae vs. coxala 1a pectinate, with several digitations and scutum not widened anteriorly vs. scutum widened anteriorly and from *Pollicotrombium* in palptibia with all setae nude, one of them distinctly longer than the remaining ones vs. palptibia with at least one seta barbed; all setae similar in length, scutum subquadrate vs. scutum distinctly elongated, setae PL placed on scutum vs. PL placed outside scutum and two solenidia on palptarsus relatively long vs. two solenidia on palptarsus very short.

#### *Sicilitrombium albanesianum* nov.sp.

Description. Idiosoma ornamented dorsally with 20 very fine barbed setae. Posterior setae h2 very long, barbed (in holotype broken). fD formula 6-4-4-4-2. One pair of eyes on each side. Scutellum oval, its width less than width of scutum (Fig. 1). Scutum with rounded anterior margin and almost straight posterior margin. Posterior part of lateral sides slightly convex. Setae AM, AL and PL very weakly barbed, PL are the longest. Sensillary setae (S) covered with setulae distributed in the distal part of stem; located medially between AL and PL (visible in paratype),  $AP > MA$  (Fig. 3).

1999

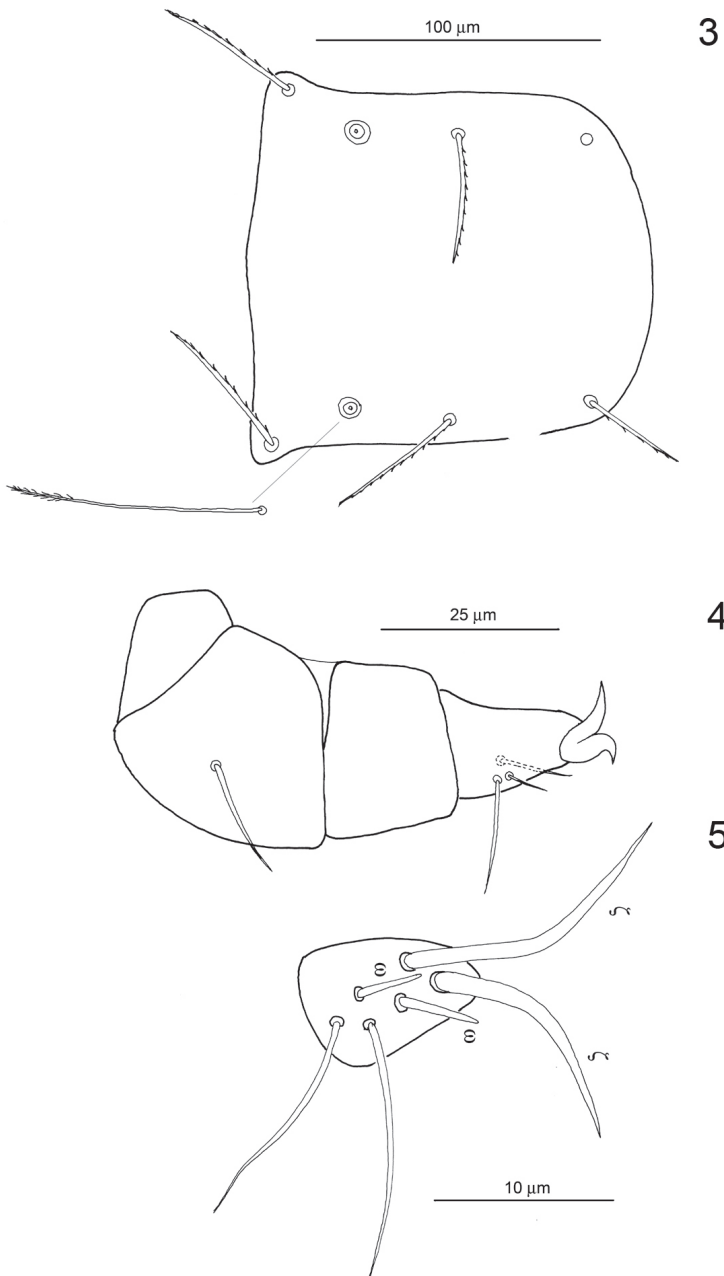


**Figs. 1-2.** *Sicilitrombium albanesianum* nov.sp. (1) idiosoma, dorsal view; (2) idiosoma and gnathosoma, ventral view.

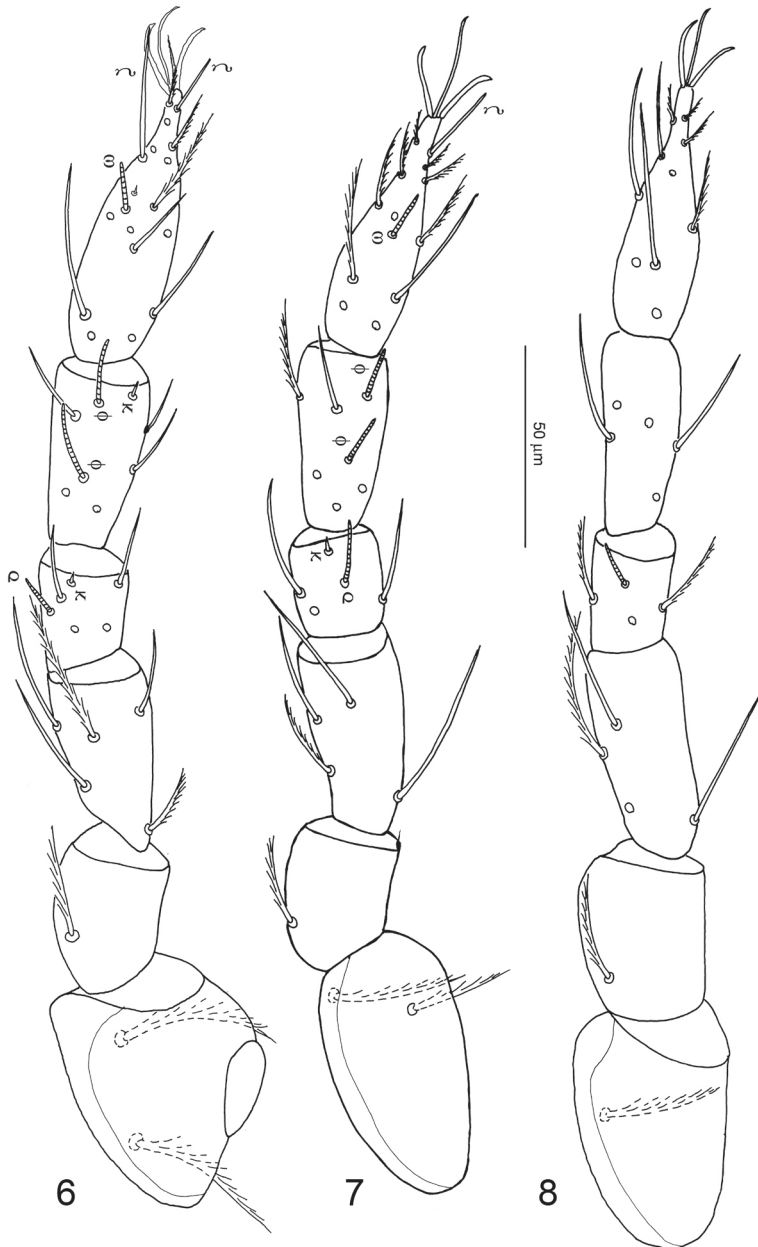
Ventral side of idiosoma with two setae 3a and 10 very fine barbed setae behind coxae III, arranged 2-2-4-2. Coxala 1a and other coxalae, all barbed (Fig. 2).

Gnathosoma with barbed hypostomatae and nude galealae. Posterior margin of gnathosoma rounded (Fig. 2). Palpfemur with one thin and nude seta, palpgenu without setae. Palptibia with 3 nude setae; one of them distinctly longer than the remaining ones. Palp tibial claw divergent (Fig. 4). Palptarsus with 2ζ, 2ω and 2 nude setae. fPp = N-O-NNN-NNωωζζ (Fig. 4, 5).

2000



**Figs. 3-5.** *Sicilitrombium albanesianum* nov.sp. (3) scutum (sensillary seta from paratype); (4) palp; (5) palptarsus.



**Figs. 6-8.** *Sicilitrombium albanesianum* nov.sp. (6) leg I; (7) leg II; (8) leg III.

Leg lengths. I 296 holotype, 306 paratype, II 276, 282, III 291, 317. IP = 863 holotype, 905 paratype.

Leg setal formula. Leg I: Ta 1 $\omega$ , 1 $\epsilon$ , 2 $\zeta$ , 14 (3N, 11B), Ti 2 $\phi$ , 1 $\kappa$ , 5 (3N, 2B), Ge 1 $\sigma$ , 1 $\kappa$ , 4N, Fe 5 (3N, 2B), Tr 1B, Cx 2B (Fig. 6).

Leg II: Ta 1 $\omega$ , 1 $\zeta$ , 11 (1N, 10B), Ti 2 $\phi$ , 5 (1N, 4B), Ge 1 $\sigma$ , 1 $\kappa$ , 3 (2N, 1B), Fe 4 (2N, 2B), Tr 1B, Cx 2B (Fig. 7).

Leg III: Ta 10 (3N, 7B), Ti 5 (2N, 3B), Ge 1 $\sigma$ , 3B, Fe 4 (2N, 2B), Tr 1B, Cx 1B (Fig. 8). Metric data are given in Table 1.

E t y m o l o g y . The specific epithet is derived from the type locality.

T y p e . Holotype larva, Sicily, Piana degli Albanesi n. Palermo (38°00'N, 13°17'E), 6.06.2010, Italy, from herbaceous plants (MNHU); leg. R. Haitlinger. Paratype: one larva, Sicily, Castronuovo di Sicilia (Palermo prov.) (37°40'N, 13°36'E), 30.05.2010, Italy, from herbaceous plants, in MNHU.

### ***Arknotrombium* HAITLINGER 2007**

This genus was created for *Arknotrombium arknesianum* from Montenegro (HAITLINGER 2007). Correct diagnosis for the genus is: larva with ornamentation dorsal surface has the following features: fD 18 enlarged setae (4-4-4-2), fV 10 (2-2-2-2-2), fnCx 2,1,1, fnFe 5,4,4, fnTi 5,5,5, fnTa 9,9,9, IP 684. Ta III with reduced inner claw, scutalae PL relatively far from posterior border. Anterior border wide and weakly rounded.

Leg setal formula. Leg I: Ta 1 $\omega$ , 1 $\epsilon$ , 1 $\zeta$ , 9B; Ti 2 $\phi$ , 5B; Ge 2 $\sigma$ , 1 $\kappa$ , 3B; Fe 5B; Tr 1B; Cx 1B, 1N.

Leg II: Ta 1 $\omega$ , 1 $\epsilon$ , 9B; Ti 2 $\phi$ , 5B; Ge 2 $\sigma$ , 1 $\kappa$ , 3B; Fe 4B; Tr 1B; Cx 1B.

Leg III: Ta 9B; Ti 5B; Ge 2 $\sigma$ , 3B; Fe 4B; Tr 1B, Cx 1B.

Gnathosoma with hypostomalae and galealae. Palptibia with three setae (2B, 1N); palp-tarsus with 6 setae (1 $\omega$ , 1 $\zeta$ , 4N).

### ***Javatrombium* HAITLINGER 2009**

This genus was erected for *Javatrombium sulawesiense* from Sulawesi, Indonesia (HAITLINGER 2009).

Corrected setal formula. Leg I: Ta 1 $\omega$ , 1 $\epsilon$ , 1 $\zeta$ , 15B; Ti 2 $\phi$ , 6B; Ge 2 $\sigma$ , 1 $\kappa$ , 4B; Fe 6B; Tr 1B; Cx 2 (N, B).

Leg II: 1 $\omega$ , 1 $\epsilon$ , 10B; Ti 2 $\phi$ , 5B; Ge 1 $\sigma$ , 1 $\kappa$ , 2B; Fe 5B; Tr 1B; Cx 1B.

Leg III: Ta 11B; Ti 5B; Ge 1 $\sigma$ , 2B; Fe 4B; Tr 1B; Cx 1B.

Moreover, palptarsus with 6 setae (1 $\omega$ , 5N); one seta is relatively long.

This genus was mistakenly placed in the family Trombidiidae. SABOORI et al. (2010) gave a key and setation patterns of Trombidoidea. *Javatrombium* has femur I with 6 setae, genu II and III with 2 normal setae, femur II with 5 setae and microseta  $\kappa$  present on genu II. Based on these features *Javatrombium* must be transferred to the family Microtrombidiidae.

**Table 1.** Metric data for *Sicilitrombium albanesianum* nov.sp. H – holotype, P – paratype

	H	P		H	P
IL	762	–	2b''	48	54
IW	381	–	2b, 3b	36	–
AW	120	–	TaI	69	67
PW	122	127	TiI	48	50
L	153	154	GeI	31	33
W	132	133	FeI	54	59
AM	40	44	TrI	34	38
AL.	47	–	CxI	60	59
PL	52	57	TaII	56	60
AA	56	43	TiII	46	45
SB	104	99	GeII	28	29
AP	62	–	FeII	48	40
MA	44	–	TrII	35	28
ASB	119	–	CxII	63	70
PSB	34	–	TaIII	64	57
LSS	119	107	TiIII	46	51
HS	54	53	GeIII	30	32
SS	42	47	FeIII	52	57
SL	62	59	TrIII	39	46
GL	122	108	CxIII	60	64
DS	46-52	48-54	Leg I	296	306
S		60	Leg II	276	282
1b'	45	48	Leg III	291	317
1b''	47	48	IP	863	905
1b, 2b	55	42	LPS	–	120

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